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CLASSIFICATION OF THE SCIENCES

BY J. W. POWELL

All abstracts are concomitant in pentalogic groups to constitute the concrete. The pentalogic groups in the individual are always found in pentalogic series in the species. Thus a species is a class of individuals constituting a kind and a series. Species may again be regrouped into higher classes which we call genera. A genus is a group of species constituting a class of a higher order which is also a series, the genus itself being pentalogic in kind and pentalogic in series; and however far we may thus generalize by regrouping into more comprehensive classes, forever we must observe that pentalogic kinds are found in pentalogic series. It is sometimes affirmed, and more often taken for granted, that a scientific classification is a creation of the scientific mind and not a discovery by the scientific mind. It is sometimes affirmed that there may be many valid classifications, and yet practically all scientific men repudiate the doctrine and are forever striving for a valid and final classification, realizing that there can be but one.

Two principles must be observed in classifying the sciences that may properly be seriated and coördinated. The first is the plan of organization by which bodies are incorporated; the second is the concomitance of the categories. By the first bodies are grouped, by the second categories are discerned by being properly identified and discriminated. By the first a science is coëxtensive with a group of bodies; by the second a science is coëxtensive with a group of categories derived from one essential. We may therefore speak of corporeal sciences and categorical sciences, the corporeal being concrete and the categorical being abstract.

In the corporeal sciences one class of bodies have relations to all other classes, so that it is impossible to explicate the class without, to some extent at least, explicating all. For example, in explaining mammals we find it necessary to explain their teeth, for different mammals live on different kinds of food, — one is herbivorous, and we must know why teeth have one form to masticate vegetal food; others are carnivorous, and we must know why their teeth have another form to masticate animal food; and in general we must discover the relation of mammals to other animals, to plants, to rocks, to fluids, and to solids.

In like manner every categorical science implicates the existence of the other categories found in the group of bodies under consideration. The professional investigator who has to deal fundamentally with one category cannot neglect the others, for they are needed to explain the phenomena with which he deals, and often his investigation extends to the others. The chemist thus sometimes seems to be a physicist, and the physicist sometimes seems to be a chemist.

In seriating the sciences into grand divisions it is pertinent and useful to observe that at each stage there seems to be a special evolution of one of the categories, so that one after another takes a leading part. In the molecules exhibited in nebulæ and other substances, number controls, and largely the science is expressed in numbers. In astronomy space takes the leading rôle, so that in this realm space is the chief theme. In geonomy motion leads the way, so that motion in its various modes is the central topic. In phytonomy time as causation steps to the front and heredity is the theme, for new individuals are seriated by heredity from generation to generation. In zoönomy judgment leads the way. Thus in each stage some one of the properties becomes so predominant as to mark a grand class as its own.

This may deserve another method of presentation. Nature expresses ultimate simplicity in organizing the bodies of the universe, molecular bodies being organized on a basis of unity, stellar bodies on a basis of extension, geonomic bodies on a basis of speed, plants on a basis of persistence, and animals on a basis of consciousness. While these essentials are found in them all yet organization proceeds by steps in this manner, for the purposes of nature are achieved by abstraction on a grand scale.

We thus have *nephelonomy*, which is the science of molecules or nebulæ as bodies organized on the categories of unity; *astronomy*, which is the science of stars organized on the categories of extension; *geonomy*, which is the science of rocks organized on the categories of speed; *phytonomy*, which is the science of plants organized on the categories of persistence; *zoönomy*, which is the science of animals organized on the categories of consciousness. This gives us the grand classification of the sciences of bodies; and we have nephelonomy, astronomy, geonomy, phytonomy, and zoönomy.

In the sciences of organized bodies we find them subdivided by abstraction into categorical sciences, which we call *chemology* or *chemistry*, *morphology*, *dynamology* or *dynamics*, *ontology* or *evolution*, and *psychology*. These are the grand categorical sciences of natural bodies considered as abstractions. Thus nephelonomy, astronomy, geonomy, phytonomy, and zoönomy are severally subclassified as abstract sciences. In this series of bodies we have discrete degrees of organization. There is one degree of chemology in nephelonomy, another in astronomy, still another in geonomy, a fourth in phytonomy, and a fifth in zoönomy. In the same manner we have five degrees of morphology, five degrees of dynamology, five degrees of ontology, and five degrees of psychology in the series. I do not propose names for these twenty-five sciences, for I fear that I have already strained my credit with those who may be offended with neologisms. Here I must call attention to the fact that in gases, fluids, solids, and plants, psychic attributes are usually grouped under the term "affinity," while only of animals are psychic attributes affirmed.

In late decades the study of the ether has given rise to a group of sciences to which I give the name *ethronomy*. We know of the ether only as a medium and by reason of its being a medium. In ethronomy science has discovered five abstracts: light which exhibits numerical relations, magnetism which exhibits space relations, heat which as energy is a mode of motion, gravity which is causation through ether, and electrolysis by which the affinities of bodies are controlled through the ether. I call these sciences *photology*, *magnetology*, *thermology*, *barology*, and *electrology*.

In mankind we have a group of animals of supreme interest. Human beings are set off from the lower animals by a discrete degree of organization, although the elements of this organization are discovered in brutes. Individuals are organized in corporeal bodies, but they are again organized in demotic bodies. This organization in demotic bodies constitutes, then, a grand class coördinate with those included in ethronomy, nephelonomy, astronomy, phytonomy, geonomy, and zoönomy. To the sciences which pertain to the study of mankind as animal bodies, and also to their study as demotic bodies, I shall give the name *anthroponomy*. Man is preëminently the psychic animal, so that human psychology is set over against the other attributes of man, which are grouped under the term somatology; therefore man studied as a human body gives rise to the science of somatology and the science of psychology. To these two sciences as a group I give the name *andrology*, while andrology and demology constitute anthropology, which is the customary term; but as the science is coördinate with the greater systems, I shall use the term anthroponomy.

Demotic bodies are ideally organized to promote purposes; such bodies are as real as they are ideal. The purposes we have shown to be pleasure, welfare, morality, expression, and opinion, which are concomitant in every human act. They give rise to esthetology, technology, sociology, philology, and sophiology.

Again, we have subdivided these abstract sciences of demology severally into five groups to which we will not give names, but content ourselves with suggesting that the terms used should have systematic terminations.

The validity of these classes is demonstrated in a former work, *Truth and Error*, and in subsequent writings in this magazine.

With this fundamental classification there go many subsidiary classifications in which some part of a science is viewed only with respect to a particular group of bodies or abstracts, or from a particular aspect or a restricted group of objects. Thus, in zoönomy there may be a science of vertebrates, or a science of articulates; there may also be a science of mammals or of birds; those restricted groups of bodies give rise to more special sciences. Again, in demonomy we may consider only tribal peoples, when we will have the science of ethnology, or we may investigate the particular artifacts found in ruins, tombs, etc., when we will have the science of archeology.